

Abstract

The present invention relates to systems and methods for performing beating heart surgery involving the step of maintaining at least partial blood flow through a protected blood flow path within the right and/or left side of the heart during surgery. The protected blood flow path may be established by positioning one or more conduits within at least a portion of the right and/or left sides(s) of the heart. In a first system, at least partial blood flow may be maintained through the protected blood flow path by the pumping action of a blood pump communicatively coupled to the conduit. In a second system, at least partial blood flow is maintained through the protected blood flow path by the pumping action of the beating heart itself. The systems are therefore capable of maintaining at least partial blood flow through the right and/or left side(s) of the heart, even during periods when the cardiac output becomes compromised. The patient's lung(s) may be used at all times utilized for blood oxygenation during heart surgery, thereby avoiding the need for artificial cardiopulmonary bypass (CPB) circuits and the attendant disadvantages of CPB.